

(19) World Intellectual Property
Organization
International Bureau



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/068403 A2

- (51) International Patent Classification⁷: **C07B 35/00**
- (21) International Application Number:
PCT/US2004/040243
- (22) International Filing Date: 2 December 2004 (02.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/534,592 6 January 2004 (06.01.2004) US
- (71) Applicant (for all designated States except US):
MALLINCKRODT INC. [US/US]; 675 McDonnell
Boulevard, P.O. Box 5840, St. Louis, MO 63134 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WANG, Peter, Xi-**
anqi [US/US]; 1708 Eldon Ridge Court, Chesterfield, MO
63017 (US). **MOSER, Frank, W.** [US/US]; 3896 Petrified
Forest Drive, Arnold, MO 63010 (US).
- (74) Agents: **REBMAN, Christine, M.** et al.; Mallinckrodt
Inc., 675 McDonnell Boulevard, P.O. Box 5840, St. Louis,
MO 63134 (US).
- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.
- (84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished
upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR SELECTIVE REDUCTION OF AROMATIC COMPOUNDS

(57) **Abstract:** A method for the selective reduction of an aromatic compound. The present invention provides a method for pre-
venting the reduction of at least one halogen substituted aromatic ring of an aromatic compound, while allowing the reduction of at
least one functional group on the aromatic compound. In the present invention at least one hydroxyl group is placed on the at least
one halogen substituted aromatic ring to be protected from reduction. The aromatic compound is then reacted with at least one alkali
metal in at least one nitrogen containing base and at least one alcohol at a ratio of the alcohol to the nitrogen containing base at which
the aromatic ring with the hydroxyl group is protected from reduction, while the desired functional group is reduced.

WO 2005/068403 A2